Grand Central Station (Originally built by
the Wisconsin Central Railroad Company)
Southwest corner of West Harrison and
South Wells Streets
Chicago
Cook County
Illinois

HABS No. ILL-1016

HABS
ILL,
16-CHIG,
18-

PHOTOGRAPHS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA
Reduced Copies of Measured Drawings

Historic American Buildings Survey
National Park Service
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HISTORIC AMERICAN BUILDINGS SURVEY HABS No. ILL-1016

CRAND CENTRAL STATION (ORIGINALLY BUILT BY THE WISCONSIN CENTRAL RAILROAD COMPANY)

HABS ILL, 16-CHIG, 18-

Location: Southwest corner West Harrison and South Wells Streets, Chicago, Cook County, Illinois.

Present Owner and Occupant: Baltimore and Ohio Chicago Terminal Railroad Company.

Present Use: Railroad station.

Statement of Significance: This is one of the best-preserved early railroad stations in Chicago, and one of the finest works of the architect Solon Spencer Beman.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Original and subsequent owners: The Chicago and Great Western Railroad, which was controlled at the time by the Wisconsin Central Railroad, began the station in 1888. It was completed by the Chicago and Northern Pacific which absorbed the original owner in 1891. The Chicago and Northern Pacific Railroad was succeeded through a receivership and foreclosure by the Chicago Terminal Transfer Railroad in 1897 and that company was succeeded through a similar procedure by the present owners in 1910.

The enterprise was undertaken by what was at that time known as the Chicago & Great Western Railway, a short double-track road by which the Wisconsin Central lines and the Chicago, St. Paul and Kansas City Railroad obtained an entrance into the city. Since that time the Wisconsin Central has been leased by the Northern Pacific Railroad, and the Chicago and Great Western is now known as the Chicago and Northern Pacific.

2. Date of erection: Plans dated 1888; ground broken October, 1889; building opened December 8, 1890.

3. Architect: Solon Spencer Beman (born Brooklyn, New York, October 1, 1853, died 1914). Engineer: W. S. Jones, Chief Engineer of Chicago & Northern Pacific Railroad.

The following biographical sketch of Beman is from A. T. Andreas, History of Chicago (Chicago: The A. T. Andreas Company, 1886), III, p. 72:

"...In 1868, at the age of fifteen, Mr. Beman entered the New York office of the famous architect, Mr. Richard Upjohn, where he remained for eight years. In 1876, he opened an office on his own account in New York City, where he practiced his profession until December, 1879, when forming the acquaintance of George M. Pullman, he was invited by him, to design and construct the new City of Pullman and the extensive carworks at that place. During the winter of 1879-80 he perfected the plans for that unique city, and in the following spring the great work of building that place was begun and carried on under his personal direction to successful completion. He is the designer of all the buildings of Pullman, including the arcade, churches, schools, market, hotel, water-tower, etc. besides some thirteen hundred dwelling houses for the employees. In addition to his architectural work, for upward of a year he had entire charge of the affairs of Pullman, excepting the building of cars and the operation of the car-works..."

The following biographical sketch of Beman is from E. R. Pritchard, ed., Illinois of Today and Its Progressive Cities (Chicago, 1897), p. 25:

"In 1879 he came to Chicago at the age of 26 to design the model city of Pullman...

"A work of similar character, though on a smaller scale, has been carried out by Mr. Beman for the Proctor & Gamble Co., called Ivorydale, where Mr. Beman designed 40 large stone structures for the company's manufacturing plant, besides dwellings for the workmen. Mr. Beman was one of the board of architects who designed the World's Fair buildings, and the building for the Mines and Mining was his work...the Merchant Tailor building and others of the Fair were designed by Mr. Beman.

"In Chicago, Mr. Beman has numerous examples of his skill as an architect, in the way of office buildings, churches, club houses, railroad stations, schools and fine dwellings; prominent among which may be mentioned is the Grand Central Railroad Station, the Pullman Building, the Michigan Avenue (HABS No. ILL-1078) and the Wabash Avenue buildings of the Studebakers, the Lincoln, Pullman, Kimball (ILL-1077) and Torrence residences, Lakeside Club, the classic Christian Science Temple, etc. etc. Mr. Beman also designed the famous Chicago Coliseum building, one of the largest exhibition buildings in the world.

"Mr. Beman's practice has extended well over the country. ...the Public Library at Branford, Conn. At Milwaukee the fourteen story Pabst office building, and the North-

western Mutual Life Building. At Omaha the 'Bee' building. The thirteen story Pioneer Press at St. Paul, the ten story Michigan Trust Co.'s building at La Crosse, Wisc., and many other notable structures aggregating in cost some fifteen million dollars, all of which was done by him since he came to Chicago."

4. Builder, suppliers, etc.: Masonry by John Griffiths; ornamental iron work by Chicago Architectural Iron Works; plumbing by M. J. Corboy; elevators by Crane Company; train shed by Keystone Bridge Company; Marbleite columns by Art Marble Company; hardware by Orr and Lockett; pressed brick by Tiffany; fireproofing by Illinois Terra Cotta Company; painting by W. P. Nelson and Company /Armstrong Chinn, Paper read before the joint meeting of the Engineering Division of Western Society of Engineers and the Chicago Chapter, Railway and Locomotive Historical Society, October 21, 1936, published in Bulletin No. 46, the Railway and Locomotive Historical Society, Inc. (Boston: Baker Library, Harvard Business School, April, 1938), pp. 53-55/.

5. Original plans, construction, etc.: One set of drawings is signed: Pioneer Fire Proof Const. Co. by Chas. Y. Eisler, Secy.; William Goldie & Sons, Carpenter; W. P. Nelson & Co. painter; Barney Rodatz.

6. Alterations and additions: Platform canopies have been built beyond the limits of the original train shed to accommodate longer trains, and the skylight in the trainshed has been considerably reduced in width. The station building survives with few alterations.

B. Historical Events and Persons Associated with the Building:

"The Grand Central Station had its inception in 1867 when a corporation known as "The LaSalle and Chicago Railroad Company" was formed to construct a railroad from Chicago to the West. Very little construction was undertaken by this Company; in 1872 the name of the Railroad was changed to the Chicago and Great Western and several attempts were made to construct its railroad. This Chicago and Great Western Railroad should not be confused with the present Chicago Great Western Railroad which has no "and" in its name and did not come into existence for several years after the Chicago and Great Western had disappeared as a corporation. In 1885 interests in control of the Wisconsin Central Railroad acquired control of the Chicago and Great Western and construction was actively pursued, the railroad being completed in 1888 from a point south of the present Grand Central Station to Forest Park where connections were

made with the Wisconsin Central Railroad then also recently completed, with the Minnesota and Northwestern Railroad at that time under construction. The Wisconsin Central is now known as the Soo line and Minnesota and Northwestern is now the Chicago Great Western Railroad. The Chicago passenger terminal of these roads was a temporary station at Wells and Polk Streets which served from 1888 until the present Grand Central Station was completed.

"In 1890 The Chicago and Northern Pacific Railroad was organized by Henry Villard and his associates on the Northern Pacific, and took over four smaller companies of which the most important were the Chicago and Great Western and the Chicago and Calumet Terminal Railroad, the latter founded and developed by General Joseph T. Torrence, extended from what is now Gary, through East Chicago, Blue Island and the western suburbs of Chicago. The Chicago and Northern Pacific completed the construction of the Grand Central Station in 1891...

"When the station was opened in 1891, the Roads using it were the predecessors of the Chicago Great Western and the Soo Line, as well as an extensive suburban business of the Chicago Northern Pacific. In 1892 the Baltimore & Ohio Railroad became a tenant in the Station and in 1903 the Pere Marquette first extended its train service to Chicago and used the Grand Central Station for its passenger terminal.

"The Chicago & Northern Pacific Railroad was succeeded through a receivership and foreclosure by the Chicago Terminal Transfer Railroad in 1897 and that Company was succeeded through a similar procedure by the Baltimore and Ohio Chicago Terminal Railroad in 1910. The Grand Central Station has been owned and operated by that Company for the past 26 years. It has been modernized during that period in many of its details, but in all such remodeling care has been taken to preserve the symmetry and unity of its original design. The grand Central Station was the first in Chicago to be equipped with facilities for air conditioning cars; its track layout has been expanded to meet modern train and traffic needs; its accessory coach yards and engine terminals have been completely rebuilt, and, while now 45 years old the appointments and facilities of the Station have been kept abreast of the present day needs so that for convenience to its patrons, it is not surpassed..." /Ibid./

Mr. David S. Wegg was president of the railroad at the time /the station was built/ and Mr. Willis S. Jones was Chief Engineer. Mr. Wegg later planned and developed the large and important industrial district between Roosevelt Road and 22nd Street in Cicero.

C. Sources of Information:

1. Primary Sources:

Prints of 120 original drawings are located in the Resident Engineers Office in the station, and are to be microfilmed for the Burnham Library of the Art Institute of Chicago.

Campbell, G. Murray. "A Historical Sketch of the Baltimore and Ohio Chicago Terminal Railroad Company and its Predecessor Companies," read before the Railway and Locomotive Historical Society, Chicago Chapter, April 11, 1947, typed copy revised March, 1953.

Sullivan, Louis H. Address in memory of Solon Spencer Beman before the Illinois Chapter of the American Institute of Architects... 1915, June. Manuscript collection of the Chicago Historical Society.

2. Bibliography:

Andreas, A. T. History of Chicago. 3 vols. Chicago: The A. T. Andreas Company, 1886. Vol. III, p. 72.

Chinn, Armstrong. Paper read before the joint meeting of the Engineering Division of Western Society of Engineers and the Chicago Chapter, Railway and Locomotive Historical Society, October 21, 1936, published in Bulletin No. 46, the Railway and Locomotive Historical Society, Inc. Boston: Baker Library, Harvard Business School, April, 1938. pp. 53-55.

Condit, Carl W. The Rise of the Skyscraper. Chicago: The University of Chicago Press, 1952. pp. 203-205.

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Inland Architect. Vol. XIII, No. 1 (February, 1889). p. 9. Description and illustration.

Jenkins, Charles E. "Solon Spencer Beman," Architectural Reviewer (February, 1897). pp. 47-101.

Meeks, Carroll L. V. The Railroad Station, an Architectural History. New Haven: Yale University Press, 1956. pp. 89, 105-166, Fig. 1.

Pritchard, E. R. (ed.) Illinois of Today and Its Progressive Cities. Chicago, 1897. p. 25.
Short biography of Beman with photograph and list of works.

Randall, Frank A. History of the Development of Building Construction in Chicago. Urbana: The University of Illinois Press, 1949. pp. 19, 121, 175, 176, 184, 192. Bibliography.

D. Supplemental Material:

1. "The Station is located on the south west corner of Harrison and Wells Streets, the Harrison Street frontage being 228 feet and the Wells Street frontage 482 feet, on the corner is a tower with a height of 247 feet.

"The architecture is of Norman Castellated style, the motif of early Norman castles being accurately carried out from the barricade approach and donjon keep to high watch tower and flanking towers. Even the cornice stimulates that projecting feature of Norman castles from which our ancestors poured burning sand and molten lead upon their foeman below. The arch is very much accentuated in the design, all entrances, both pedestrian and vehicular, are massive arches of Connecticut Brownstone which carry the walls of brown brick. Numerous turrets surmount the walls, which are dotted with narrow glassless windows throughout their height. Architecturally both the exterior and interior of the buildings are artistic with remarkable adherence to the castellated pattern and unity of tone.

"From the utility standpoint the structure is adapted to its purpose. The main waiting room is 70 x 200 feet and all the usual accessories of ticket office, newsstand, telegraph and telephone services are conveniently grouped around it. Vehicular access is had through an interior "carriage court", which although designed and built in the "horse and buggy days" is both commodious and suitable for present day motor traffic. The concourse extends from the waiting room across the head end of the eight station tracks and adjoins the carriage court. The station tracks are covered by an arched train shed approximately a city block in length, which has been supplemented by butterfly sheds over the platforms between tracks, which have been extended from time to time as the length of the tracks increased...

"Some side lights on the Station will perhaps be interesting: The structure is upon a pile foundation--9 1/2 miles of piling support the building. The high tower with a weight of 6000 tons is founded on 50 foot piles, each carrying 24

tons of load,--so carefully, however, was this load related to the load from the much lower and lighter portions of the building that after 45 years no cracks or defects appear in the tower walls or foundations." /Chinn, loc. cit./

2. "Grand Central Station, familiarly known in its early days as the Wisconsin Central Station, has been such an important feature in the development of what is now the Baltimore & Ohio Chicago Terminal Railroad, and it is a structure of such renown, that special emphasis is appropriately due it.

"It displayed its splendor to the public upon its opening--December 8, 1890. Its location was determined by the desire of the railroad to be adjacent to the Chicago River, where freight of schooners and steam vessels could directly be handled. The passenger station fell into this scheme of things.

"The influence of Mr. Henry Villard was dominating the Chicago and Great Western Railroad, and it was a month before the incorporation of his Chicago and Northern Pacific Railroad that ground was broken for the foundation of Grand Central Station in October 1889. Mr. Villard arranged to employ the eminent Chicago architect, Mr. S. S. Beman, for the undertaking, and Mr. W. S. Jones was retained as consulting engineer.

"Over 15,000 piles were driven for the supporting foundation. The 247 foot bell tower, weighing 6,000 tons, had its weight distributed so each pile bore the weight of 24 tons. 50-foot piles were driven under the tower and 30-foot piles under the balance of the structure. These piles were capped with 12' x 12' oak timbers, and the intervening spaces filled with 12 inches of concrete, overlaid with 12 inch timbers, 4 inches apart, and this overlay also filled in with concrete. On top of this base another 18 inches of concrete was poured. Over the years no evidence of settling of the building has occurred. This speaks for the fine engineering done.

"Originally an 11,000 lb. bell tolled the hours of the clock, with its 13-foot dial--then the second largest clock in the country. In later years the bell was removed.

"Grand Central Station is Norman castellated architecture, extending 228 feet on Harrison Street and 482 feet on Wells Street, with six stories in the tower and four in the wings. The Stylobate is Connecticut brownstone, extending upward

26 feet in the tower, surmounted by a coronal moulding device, with brown brick above that. Brownstone also extends upward for 8 feet in the wings, and has brick above.

"The shafts forming the arches are of polished gray granite. The flooring in the station is variegated red and white Vermont marble. The wainscoting of the walls is pink Tennessee marble, with a skirting base of dark Tennessee marble. The imposing staircase to the restaurant is of Knoxville marble. The specially created hardware by Orr & Lockett, of Chicago, was the subject of wide news comment, because of its beautifully created motifs, and nothing created more comment than the marbeleite columns, 25 feet high, reproducing Sienna marble. These are encased iron pillars and they were made by the Art Marble Company of Chicago by processes that are trade secrets.

"The rooms upstairs furnished offices and provided a hotel. Hotel accommodations were terminated upon the last day of November 1901. While the LaSalle Street Station was under construction, the New York Central (Lake Shore & Michigan Southern) and the Rock Island through trains used Grand Central Station, from December 29, 1900 to July 12, 1903, using what is known as the "hole in the Wall" track at the end of the Grand Central Station tracks.

"Throughout the years Grand Central Station has continued to be one of the imposing structures of downtown Chicago, and this passenger station today, modernized in keeping with present tastes, is still one of the fine structures of the City." /Campbell, loc. cit./

3. "The station was built between 1889 and 1890 at the southwest corner of Harrison and Wells streets for the now defunct Chicago and Northern Pacific Railway. The company was originally planned by Henry Villard to extend his recently opened Northern Pacific Railway from St. Paul to Chicago, but the connection was never completed. The station property and the approach tracks were later acquired by the Baltimore and Ohio Chicago Terminal Railroad, which is now the proprietary company, the Chesapeake and Ohio being the only remaining tenant. By the standards of big metropolitan terminals, Grand Central is relatively small. It now handles only ten trains a day (1963), six of them operated by the Baltimore and Ohio, and includes only six tracks for passenger trains and three for mail and express. As in the case of all old terminals, platforms and canopies have been built far beyond the limits of the train shed to accommodate trains of fifteen or sixteen cars.

"The station building is of secondary importance to the historian of the Chicago school. It has the common L-shaped plan of the grade-level terminal, with the shed embraced by the two wings of the L. The exterior walls are bearing-masonry construction resting on concrete footings supported in turn by 55-foot piles extending to hardpan clay underlying the layers of clay and sand that compose the overburden. The impresive clock tower at the corner, 222 feet high, was built first to avoid unequal settlement. The architectural treatment of the exterior represents a clean and handsome adaptation of Norman forms to the commercial style. The emphasis is on smooth planes and simple geometric masses, qualities enhanced by the superb brickwork of the walls. Until the completion of Cincinnati Union Terminal in 1933, The Grand Central building most closely approached the forms of modern commercial architecture among American railroad stations. The main floor, which contains the waiting room and ticket offices is spacious and unusually warm and inviting. The interior cast-iron columns are covered with fireproof tile and imitation Mexican onyx, and the wall surfaces are finished in brown Tennessee marble.

"The feature that distinguishes Grand Central Station as a work of structural art is the glass and iron construction of the train shed, concourse, and taxi rotunda. The balloon shed has a clear span of 156 feet, a height of 78 feet, and an over-all length of 555 feet. The vault itself is composed of overlapping panels of corrugated sheet iron supported on a series of parallel wrought-iron arched trusses of semicircular form. The spring line of the arches is nearly flush with the platform surface; thus the vault forms a half-cylinder of circular section. At the time of its construction, it was the largest train shed of its kind except for that of the original Grand Central Terminal in New York (1869-71).

"The train shed is terminated at the front (toward the street) by a glass wall exactly conforming in shape to a right section of the vault. The lightness and transparency of this wall is the consequence partly of the very thin sash inclosing the panes of glass and partly of the open trusswork brackets and columns supporting it. It is a superb example of functional glass and iron construction, another case of this favorite structural technique of the late nineteenth century. The warm light diffused throughout the station end of the train shed comes in good part through this glass curtain. Much of it, however, comes through the flat glass roof that spans the mail and baggage platform. This roof is carried from the train-shed arches to the building wall by means of light horizontal trusses.

The clean wall planes and fine brickwork, the weightless and translucent surfaces of glass and the delicacy of the wrought-iron members combine to form the Chicago school's most beautiful and most nearly forgotten example of the advanced architecture of railway terminals at the end of the past century.

"Structures such as the balloon shed of Grand Central Station provided the precedent for the modern methods of spanning large areas by means of steel ribs or concrete shells with no intermediate supports." /Condit, loc. cit./

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural character: Grand Central exhibits a stage in the transition from the richly decorated surfaces and picturesque silhouette associated with the High Victorian Gothic to the stout, bare treatment and more static silhouette associated with the revival of Romanesque forms in the 1870's and 1880's. Grand Central still has an extremely tall tower, but "unbroken vertical masses on each of the main facades step gradually up to the climactic tower, thus conforming to the new configuration." Beman incorporated large blocks of stone into his brick walls at the tower and the arches, an innovation of the period, probably stemming from H. H. Richardson's work. The train shed is one of the best surviving smaller sheds of the period, elegantly proportioned and harmonious with the concourse and the capacious porte-cochere. /Meeks, op. cit., pp. 87, 105, 106/.

2. Condition of fabric: Good.

B. Description of Exterior:

1. Over-all dimensions: The building consists of an L-shape brick station, with a 228' long north side and a 482' east side, embracing a train shed on the southwest. The main block of the station is seven stories high, with a 247' tower, 30' square at the base, at the northeast corner.

2. Structural system: The train shed is supported by open web iron trusses, covered with corrugated iron, and crowned with skylights and a tall ventilator. The trusses are spaced 39' on center, the train shed is 320' long, and the platform is 555' long. The inner chords of the trusses form perfect semi-circles with a radius of 59'-6" or a clear span of 119'. The outer chords of the trusses are

also segmental, but with a longer radius, 76'-6", and the break to form a haunch 30' above the ground line. The trusses are not hinged, and are 3' deep at the crown, and 3' deep at the base where they are securely fastened to massive concrete footings resting on piling. The ventilator is 17'-6" high, giving a total height to the train shed of 80'.

C. Description of Interior:

Floor plans: The main pedestrian entrance to the building is under the tower. Extending along the east side of the building are a large lobby with ticket offices, a large general waiting room, toilets, and baggage rooms. A restaurant is at the south end of this east portion. The north wing of the brick portion of the station is a carriage entrance, approached from the street under ponderous, massive semi-circular arches. The train shed is approached from the waiting room on the east and from the carriage entrance on the north.

The rooms are ample in size, and the scale of the building is large. Floor to floor heights are: Basement 9'-9", first floor 26'-6", second floor 12'-7", third floor 13'-9", fourth floor 12'-2", fifth floor 12'-2", sixth floor 12'-8", seventh floor 11'-0", roof level to coping of parapet 11'-0". The general waiting room is 70' x 136' divided lengthwise by two rows of columns spaced 19'-6" on center.

Prepared by Osmund Overby, Supervisory Architect
and
Larry J. Homolka, Historian
National Park Service
July 1963

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Addendum to:
GRAND CENTRAL STATION
201 W. Harrison Street (Corner of
W. Harrison and S. Wells Streets)
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HABS No. IL-1016

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey
National Park Service
Department of the Interior
Washington, DC 20013-7127

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